

09/954,737

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INFORMATION DISCLOSURE CITATION	
Attorney Docket No.: GC834-2	Serial No.: 09/954,737
Applicant: Bron et al.	RECEIVED
Filing Date: September 17, 2001	Group: 1636 APR 10 2003
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## US PATENT DOCUMENTS

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Initial	Number	Date	Name	Class	Class	Date

## FOREIGN PATENT DOCUMENTS

Examiner's	Document				Sub-	Translation
Initials	Number	Date	Country	Class	Class	Yes/No
Ad2	WO 02/055717 A2	7/18/02	PCT	X	X	
Ad2	WO 99/51753	10/14/99	PCT	X	X	
Ad2	0 444 759 A1	09/04/91	EP	X	X	

## OTHER DOCUMENTS

Examiner's	
Initials	Author, Title, Date, Pertinent Pages, etc.
Ad2	Jongbloed, Jan D. H. et al., « TatC Is a Specificity Determinant for Protein Secretion via the Twin-arginine Translocation Pathway, » <i>Journal of Biological Chemistry</i> , vol. 275, no. 52, pp. 41350-41357, December 29, 2000.
	Tjalsma, Harold et al., « Signal Peptide-Dependent Protein Transport in <i>Bacillus subtilis</i> : a Genome-Based Survey of the Secretome, » <i>Microbiology and Molecular Biology</i> , vol. 64, no. 3, pp. 515-547, September, 2000.
	Van Dijk, Jan Maarten et al., « Functional genomic analysis of the <i>Bacillus subtilis</i> Tat Pathway for protein secretion, » <i>Journal of Biotechnology</i> , pp. 243-254, September 25, 2002.
	Database EMBL, Blattner F.R. et al., « Hypothetical 11.3 KD Protein in UDP-RFAH Intergenic Region (TATA Protein), Database accession no. 065938, XP002133194.
	Database EMBL, Sargent, F. et al., « TATB Protein, » Database accession no. 069415, XP002133195.
	Database EMBL, Sargent, F. et al., « Sec-Independent Protein Translocase Protein TATC, » Database accession no. P27857, XP002133196.
Ad2	Database EMBL, Daniels D. L. et al., « Deoxynucleotidyl transferase tatD, » Database accession no. P27859, XP002227139.
Ad2	Copy of PCT Search Report
	↳ considered, but not for publication
	Ad2
Examiner	Donald A. Huff, Jr.
	Date Considered 10/30/03

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## INFORMATION DISCLOSURE CITATION

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Attorney Docket No.: GC634-2-US	Serial No.: 09/854,737
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## US PATENT DOCUMENTS

Examiner's Initial	Document Number	Date	Name	Class	Sub-Class	Filing Date
ABT	3,817,837	6/18/74	Rubenstein et al.	195	103.5	11/8/72
	3,850,752	11/26/74	Schuurs et al.	195	103.5	10/29/71
	3,939,350	2/17/76	Kronick et al.	250	365	4/29/74
	3,996,345	12/7/78	Ullman et al.	424	12	6/30/75
	4,275,149	6/23/81	Litman et al.	435	7	11/24/78
	4,277,437	7/7/81	Maggio	422	61	12/10/79
V	4,366,241	12/28/82	Tom et al.	435	7	9/7/80
AB2	4,816,567	3/28/89	Cabilly et al.	530	387	4/8/86

## OTHER DOCUMENTS

Examiner's Initials	Author, Title, Date, Pertinent Pages, etc.
AB2	Altshul et al., "Gapped BLAST and PSI-BLAST: a new generation of protein database programs," Nucl. Acids Res., Vol. 25, pp. 3389-3402, 1997
	Antelmann et al., "Expression of a Stress - and Starvation-induced <i>dpa/pexB</i> - Homologous Gene is Controlled by the Alternative Sigma Factor $\sigma^B$ in <i>Bacillus Bacillus</i> ," J. of Bacteriology, vol. 179, pp. 7251-7256, 1997
	Antelmann et al., "Phosphate Starvation-Inducible Proteins of <i>Bacillus Bacillus</i> : Proteomics and Transcriptional Analysis," J. of Bacteriology, vol. 182, pp. 4478-4490, 2000
	Bakhiet et al., "Studies on Transfection and Transformation of Protoplasts of <i>Bacillus larvae</i> , <i>Bacillus subtilis</i> , and <i>Bacillus popilliae</i> ," Applied and Environmental Microbiology, vol. 49, no. 3, pp. 577-581, March, 1985.
	Benton et al., "Steering Agt Recombinant Clones by Hybridization to Single Plaques in situ," Science, vol. 198, no. 4286, pp. 180-182, April 8, 1977.
	* Berger and Kimmel, Guide to Molecular Cloning Techniques, Methods in Enzymology, vol. 152, Academic Press, San Diego, CA (1987)
	Berks B., "A common export pathway for proteins binding complex redox cofactors," Mol Microbiol, vol. 22, pp. 393-404, 1996.
	Berks et al., "The Tat protein export pathway," Mol Microbiol, vol. 35, pp. 260-274, 2000.
	Bernhardt et al., "Specific and general stress proteins in <i>Bacillus subtilis</i> - a two-dimensional protein electrophoresis study," Microbiol, vol. 143, pp. 999-1017, 1997.
	Blum et al., "Improved silver staining of plant proteins, RNA and DNA in polyacrylamide gels," Electrophoresis, vol. 8, pp. 93-99, 1987.
	Bogsch et al., "Pathway specificity for a $\Delta$ pH-dependent precursor thylakoid lumen protein is governed by a 'Sec-avoidance' motif in the transfer peptide and a 'Sec-incompatible' mature protein," EMBO, vol. 16, pp. 3851-3859, 1997
	Bogsch et al., "An Essential Component of a Novel Bacterial Protein Export System with Homologues in Plastids and Mitochondria," J. Biol. Chem., vol. 273, pp. 18003-18006, 1998
	Bolhuis et al., "Evaluation of Bottlenecks in the Late Stages of Protein Secretion in <i>Bacillus subtilis</i> ," App. Environ. Microbiol. vol. 65, pp. 2934-2941, 1999
	Bolhuis et al., "Different Mechanisms for Thermal Inactivation of <i>Bacillus subtilis</i> Signal Mutants," J. Biolog. Chem., vol. 274, pp. 15865-15868, 1999
	Bolhuis et al., " <i>Bacillus subtilis</i> , can modulate its capacity and specificity for protein secretion through temporally controlled expression of the <i>slpS</i> gene for signal peptidase I" Mol. Microbiol. vol. 22, pp. 605-618, 1996
	Brink et al., "Targeting of thylakoid proteins by the $\Delta$ pH-driven twin-arginine translocation pathway requires a specific signal in the hydrophobic domain in conjunction with the twin-arginine motif," FEBS Letters, vol. 434, pp. 425-430, 1998
AB2	Bron et al., "Construction and Characterization of a Transformable Eightfold Auxotrophic Strain and two Ultraviolet-Sensitive Derivatives," Mutation Research, vol. 15, pp. 1-10, 1972
Examiner	Date Considered
<i>Small &amp; Huppert</i>	10/31/03
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

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Page 2 of 4		

## OTHER DOCUMENTS

Examiner's Initials	Author, Title, Date, Pertinent Pages, etc.
ADD	Chaddock et al., "A new type of signal peptide: central role of a twin- arginine motif in transfer signals for the $\Delta$ pH-dependent thylakoid protein translocase," <i>EMBO</i> , vol. 14, pp. 2715-2722, 1995.
	Chanal et al., "MicroCorrespondence," <i>Molec. Microbiol.</i> vol. 30, pp. 673-678, 1998.
	Chang et al., "High Frequency Transformation of <i>Bacillus subtilis</i> Protoplasts by Plasmid DNA," <i>Molec. Gen. Genet.</i> vol. 168, pp. 111-115, 1979.
	*Coombs, J., <i>Dictionary of Biotechnology</i> , Stockton Press, New York, N.Y., 1994.
	Contente et al., "Marker Rescue Transformation by Linear Plasmid DNA in <i>Bacillus subtilis</i> ," <i>Plasmid</i> , vol. 2, pp. 555-571, 1979.
	Cristobal et al., "Competition between Sec- and TAT-dependent protein translocation in <i>Escherichia coli</i> ," <i>EMBO</i> , vol. 18 pp. 2982-2990, 1999.
	Cserzo et al., "Prediction of transmembrane $\alpha$ -helices in prokaryotic membrane proteins: the dense alignment surface method," <i>Protein Engin.</i> vol. 10 pp. 673-678, 1997.
	Dalbey et al., "Protein translocation into and across the bacterial plasma membrane and the plant thylakoid membrane," <i>TIBS</i> , vol. 24, pp. 17-21, 1999.
	*Dieffenbach et al., <i>PCR Primer, a Laboratory Manual</i> , Cold Springs Harbor Press, Plainview, N.Y., 1995.
	Donovan et al., "Genes Encoding Spore Coat Polypeptides from <i>Bacillus subtilis</i> ," <i>J. Mol. Biol.</i> , vol. 196, pp. 1-10, 1987
	Eder et al., " <i>Bacillus subtilis</i> secreted phosphodi esterase/alkaline phosphatase in the product of a Pho regulon gene, phoD," <i>Microbiology</i> , vol. 142, pp. 2041-2047, 1998.
	Eymann et al., "Phosphate-starvation-inducible proteins in <i>Bacillus subtilis</i> : a two-dimensional gel electrophoresis study," <i>Microbiology</i> , vol. 142, pp. 3163-3170, 1996.
	Fischer et al., "Introduction of plasmid pC194 into <i>Bacillus thuringiensis</i> by Protoplast transformation and plasmid transfer," <i>Archives of Microbiology</i> , vol. 139, pp. 213-217, 1984.
	* Glover, D. M. (ed), <i>DNA Cloning: A Practical Approach</i> , MRL Press, Ltd., Oxford, U. K. Vol. I, II.
	Grunstein et al., "Colony hybridization: A method for the isolation of cloned DNAs that contain a specific gene," <i>Proc. Nat. Acad. Sci. USA</i> , vol. 72, no. 10, pp. 3981-3985, October, 1975.
	Haima, Peter et al., "Novel plasmid marker rescue transformation system for molecular cloning in <i>Bacillus subtilis</i> enabling direct selection of recombinants," <i>Mol. Gen. Genet.</i> vol. 223, pp. 185-191, 1990.
	* Hale & Marham, <i>The Harper Collins Dictionary of Biology</i> , Harper Perennial, NY (1991)
	*Hampton, R. et al., <i>Serological Methods, a Laboratory Manual</i> , APS Press, St. Paul, MN. 1990.
	*Harwood et al., <i>Molecular Biological Methods for Bacillus</i> , John Wiley & Sons, 1990.
	Hirose et al., "Proteome analysis of <i>Bacillus subtilis</i> extracellular proteins: a two-dimensional protein electrophoretic study," <i>Microbiology</i> , vol. 146, pp. 65-75, 2000
	Holubova et al., "Transfer of Liposome-Encapsulated Plasmid DNA to <i>Bacillus subtilis</i> Protoplasts and Calcium-Treated <i>Escherichia coli</i> Cells," <i>Folia Microbiol.</i> vol. 30, pp. 97-100, 1985.
	Hulett et al., "Evidence for Two Structural Genes for Alkaline Phosphatase in <i>Bacillus subtilis</i> ," <i>J. Bacteriol.</i> vol. 172, pp. 735-740, 1990
	Hynds et al., "The Sec-independent Twin-arginine Translocation System Can Transport Both Tightly Folded and Misfolded Proteins across the Thylakoid Membrane," <i>J. Biol. Chem.</i> vol. 273, pp. 34868-3474, 1998
	Jack et al., "Constitutive Expression of <i>Escherichia coli</i> <i>tat</i> Genes Indicates an Important Role for the Twin-Arginine Translocase during Aerobic and Anaerobic Growth," <i>J. Bacteriology</i> , vol. 183, pp. 1801-1804, 2001
	Kaiser et al., "Negative charged amino acid residues play an active role in orienting the Sec-independent P33 coat protein in the <i>Escherichia coli</i> inner membrane," <i>EMBO</i> , vol. 16, pp. 2197-2204, 1997.
ADD	Klenk et al., "The complete genome sequence of the hyperthermophilic, sulphate-reducing archaeon <i>Archaeoglobus fulgidus</i> ," <i>Nature</i> , vol. 394, pp. 364-370, 1998.
Examiner	Date Considered
<i>[Signature]</i>	10/30/03
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 809; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

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OTHER DOCUMENTS

Examiner's Initials	Author, Title, Date, Pertinent Pages, etc.
SAZ	Kroll et al., "A Multifunctional Prokaryotic Protein Expression System: Overproduction, Affinity Purification, and Selective Detection," <i>DNA and Cell Biology</i> , vol. 12, no. 5, pp. 441-453, 1993.
	Kunst et al., "The complete genome sequence of the Gram-positive bacterium <i>Bacillus subtilis</i> ," <i>Nature</i> , vol. 390, pp. 249-264, November 20, 1997
	Kyte et al., "A Simple Method for Displaying the Hydropathic Character of a Protein," <i>J. Mol. Biol.</i> vol. 157, pp. 105-132, 1982
	Laemmli U. K. "Cleavage of Structural Proteins during the Assembly of the Head of Bacteriophage T4," <i>Nature</i> , vol. 227, pp. 680-685, 1970
	Maddox et al., "Elevated Serum Levels in Human Pregnancy of a Molecule Immunochemically Similar to Eosinophil Granule Major Basic Protein," <i>J. Exp. Med.</i> , vol. 168, pp. 1211-1226, October, 1983
	Mann et al., "Transformation of <i>Bacillus</i> spp.: an Examination of the Transformation of <i>Bacillus</i> Protoplasts by Plasmids pUB110 and pHV33," <i>Current Microbiology</i> , vol. 13, pp. 191-195, 1988.
	McDonald et al., "Plasmid Transformation of <i>Bacillus sphaericus</i> 1593," <i>Journal of General Microbiology</i> , vol. 130, pp. 203-208, 1984.
	* Miller, J. H., <i>Experiments in Molecular Biology</i> , Cold Spring Harbor Laboratory Press, Cold Spring Harbor NY (1982)
	Muller et al., "Suppression of the growth and export defects of an <i>Escherichia coli</i> secA(Ts) mutant by a gene cloned from <i>Bacillus subtilis</i> ," <i>Mol. Gen. Genet.</i> vol. 235, pp. 98-96, 1992
	Muller et al., "Localisation of the cell wall-associated phosphodiesterase PhoD of <i>Bacillus subtilis</i> ," <i>FEMS Micro. Letters</i> , vol. 180, pp. 287-296, 1999
	Muller et al., "Influence of <i>Bacillus subtilis</i> phoD on cell wall anionic polymers," <i>Microbiology</i> , vol. 143, pp. 947-956, 1997
	Murray et al., "Codon usage in plant genes," <i>Nucleic Acids Research</i> , vol. 17, no. 2, pp. 477-498, 1989.
	Otto et al., "Identification of human myocardial proteins separated by two-dimensional electrophoresis using an effective sample preparation for mass spectrometry," <i>Electrophoresis</i> , vol. 17, pp. 1843-1850, 1996.
	Porath, Jerker, "Immobilized Metal Ion Affinity Chromatography," <i>Protein Expression and Purification</i> , vol. 3, pp. 263-281, 1992.
	Pragal et al., "The signal peptidase II (lsp) gene of <i>Bacillus subtilis</i> ," <i>Microbiology</i> , vol. 143, pp. 1327-1333, 1997.
	Qi et al., "Role of PspA-P in Transcriptional Regulation of Genes Involved in Cell Wall Anionic Polymer Biosynthesis in <i>Bacillus subtilis</i> ," <i>J. Bacteriol.</i> vol. 180, pp. 4007-4010, 1998
	Rodrigue et al., "Co-translocation of a Periplasmic Enzyme Complex by a Hitchhiker Mechanism through the Bacterial Tat Pathway," <i>J. Biol. Chem.</i> , vol. 274, pp. 13223-13228, 1999.
	* Sambrook, J. et al., <i>Molecular Cloning, A Laboratory Manual</i> , 2nd Ed., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York, 1989
	Santini et al., "A novel Sec-independent periplasmic protein translocation pathway in <i>Escherichia coli</i> ," <i>EMBO</i> , vol. 17, pp. 101-112, 1998.
	Sargent et al., "Overlapping functions of components of a bacterial Sec-independent protein export pathway," <i>EMBO</i> , vol. 17, pp. 3640-3650, 1998
	Sargent et al., "Sec-independent protein Translocation in <i>Escherichia coli</i> ," <i>J. Biol. Chem.</i> , vol. 274, pp. 36073-36082, 1999
	Schaeffer et al., "Catabolic Repression of Bacterial Sporulation," <i>Proc. Natl. Acad. Sci. USA</i> , vol. 54, pp. 704-711, 1965.
	Settles et al., "Sec-Independent Protein Translocation by the Maize Hc108 Protein," <i>Science</i> , vol. 278, pp. 1487-1470, 1997
	* Singleton et al., <i>Dictionary of Microbiology and Molecular Biology</i> , 2D ED., John Wiley and Sons, New York (1994)
	Sipos et al., "Predicting the topology of eukaryotic membrane proteins," <i>Eur. J. Biochem</i> , vol. 213, pp. 1333-1340, 1993.
	Smith, Michael et al., "Protoplast Transformation in Coryneform Bacteria and Introduction of an $\alpha$ -Amylase Gene from <i>Bacillus amyloliquefaciens</i> into <i>Brevibacterium lactofermentum</i> ," <i>Applied and Environmental Microbiology</i> , vol. 51, no. 3, pp. 634-639, March, 1985
SAZ	Stanley et al., " <i>Escherichia coli</i> Strains Blocked in Tat-Dependent Protein Export Exhibit Pleiotropic Defects in the Cell Envelope," <i>J. Bacteriol.</i> vol. 183, pp. 139-144, 2001
Examiner	Date Considered
<i>Donald E. Kelly</i>	10-30-03
Examiner: Initial reference considered, whether or not citation is in conformance with MPEP 809; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

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## OTHER DOCUMENTS

Examiner's Initials	Author, Title, Date, Pertinent Pages, etc.
ADD	Stephenson et al., "Influence of a Cell-Wall-Associated Protease on Production of $\alpha$ -Amylase by <i>Bacillus subtilis</i> ," <i>App. Environ. Microbiol.</i> vol. 64, pp. 2875-2881, 1998
	Tjalsma et al., "Functional analysis of the secretory precursor processing machinery of <i>Bacillus subtilis</i> : Identification of a eubacterial homolog of archaeal and eukaryotic signal peptidases," <i>Genes &amp; Develop.</i> vol. 12, pp. 2318-2331, 1998
	Tjalsma et al., " <i>Bacillus subtilis</i> Contains Four Closely Related Type I Signal Peptidases with Overlapping Substrate Specificities," <i>J. Biol. Chem.</i> , vol. 272, pp. 25983-25992, 1997
	Tjalsma et al., "The Role of Lipoprotein Processing by Signal Peptidase II in the Gram-positive Eubacterium <i>Bacillus subtilis</i> ," <i>J. Biol. Chem.</i> , vol. 274, pp. 1698-1707, 1999
	Thompson et al., "CLUSTAL W: improving the sensitivity of progressive multiple sequence alignment through sequence weighting, position-specific gap penalties and weight matrix choice," <i>Nuc. Acids Res.</i> vol. 22, pp. 4673-4680, 1994
	Towbin et al., "Electrophoretic transfer of proteins from polyacrylamide gels to nitrocellulose sheets: Procedure and some applications," <i>Proc. Natl. Acad. Sci. USA</i> , vol. 76, pp. 4350-4354, 1979
	Vagner et al., "A vector for systematic gene inactivation in <i>Bacillus subtilis</i> ," <i>Microbiology</i> , vol. 144, pp. 3097-3104, 1998.
	Van Dijk et al., "Non-functional expression of <i>Escherichia coli</i> signal peptidase I in <i>Bacillus subtilis</i> ," <i>J. Gen. Microbiology</i> , vol. 137, pp. 2073-2083, 1991
	Van Dijk et al., "Signal peptidase I overproduction results in increased efficiencies of export and maturation of hybrid secretory proteins in <i>Escherichia coli</i> ," <i>Mol. Gen. Genet.</i> vol. 227, pp. 40-48, 1991
	Van Dijk et al., "Identification of the Potential Active Site of the Signal Peptidase SipS of <i>Bacillus subtilis</i> ," <i>J. Biol. Chem.</i> , vol. 270, pp. 3611-3618, 1995
	Vorobjeva et al., "Transformation of <i>Bacillus Megaterium</i> Protoplasts by Plasmid DNA," <i>FEMS Microbiology Letters</i> 7, pp. 261-263, 1980.
	Weiner et al., "A Novel and Ubiquitous system for Membrane Targeting and Secretion of Cofactor-Containing Proteins," <i>Cell</i> , vol. 93, pp. 93-101, 1998.
	Weinrauch et al., "Plasmid Marker Rescue Transformation Proceeds by Breakage-Reunion in <i>Bacillus subtilis</i> ," <i>Journal of Bacteriology</i> , vol. 169, no. 3, pp. 1205-1211, March, 1987.
	Weinrauch et al., "Plasmid Marker Rescue Transformation in <i>Bacillus subtilis</i> ," <i>Journal of Bacteriology</i> , vol. 154, no. 3, pp. 1077-1087, June, 1983.
	Wu et al., "Bacterial Twin-Arginine Signal Peptide-Dependent Protein Translocation Pathway: Evolution and Mechanism," <i>J. Mol. Microbiol. Biotechnol.</i> Vol. 2, pp. 179-189, 2000
ADD	Yu et al., "The Cytochrome bc Complex (menaquinone: Cytochrome c Reductase) in <i>Bacillus subtilis</i> Has a Nontraditional Subunit Organization," <i>J. Bacteriol.</i> Vol. 177, pp. 6751-6760, 1995
Examiner	10-30-03
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